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FILE LAST UPDATED: 13 Jan 2008 (20080113/ED)

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=> s multiply(w)twinned
      14329 MULTIPLY
      6762 TWINNED
L1      345 MULTIPLY(W) TWINNED
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=> s l1 and (platinum or pt)
      229024 PLATINUM
      254646 PT
L2      28 L1 AND (PLATINUM OR PT)
```

```
=> s l2 and electrode
      537255 ELECTRODE
L3      4 L2 AND ELECTRODE
```

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=> d l3 1-4 ti,ab,bib
```

```
L3  ANSWER 1 OF 4  HCAPLUS  COPYRIGHT 2008 ACS on STN
TI  Microstructure of (104)-oriented Bi3.25La0.75Ti3O12 and Bi3.54Nd0.46Ti3O12
    ferroelectric thin films on multiply twinned SrRuO3/
    Pt(111) electrodes on YSZ(100)-buffered Si(100)
AB  Uniformly (111)-oriented, multiply twinned
    SrRuO3-covered Pt electrodes were grown on YSZ(100) buffer
    layers on Si(100) substrates by a combination of r.f. sputtering and
    pulsed laser deposition (PLD). They provide a smooth and plane substrate
    surface for the growth of multiply twinned, uniformly
    (104)-oriented ferroelec. Bi3.25La0.75Ti3O12 (BLT) and Bi3.54Nd0.46Ti3O12
    (BNT) thin films grown by PLD at an optimum substrate temperature of
    750°. Microstructure, morphol., and crystallog. orientation of the
    SrRuO3/Pt electrodes and the BLT and BNT films are characterized
    by XRD, AFM, TEM, and SAED. In spite of the multiply
    twinned structure, the entire ferroelec. film has a uniform
    component P1 of the polarization vector perpendicular to the film
    plane. The (104)-oriented BLT and BNT films on electroded Si(100) are
    shown to have good ferroelec. properties (remanent polarization, coercive
    field, fatigue resistance) and are thus suitable for applications in
    Si-based technologies.
AN  2005:1136654  HCAPLUS
DN  143:413854
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TI Microstructure of (104)-oriented $\text{Bi}_{3.25}\text{La}_{0.75}\text{Ti}_3\text{O}_{12}$ and $\text{Bi}_{3.54}\text{Nd}_{0.46}\text{Ti}_3\text{O}_{12}$ ferroelectric thin films on multiply twinned $\text{SrRuO}_3/\text{Pt}(111)$ electrodes on $\text{YSZ}(100)$ -buffered $\text{Si}(100)$
AU Hesse, Dietrich; Lee, Sung Kyun; Goesele, Ulrich
CS Max-Planck-Institut fuer Mikrostrukturphysik, Halle, 06120, Germany
SO Physica Status Solidi A: Applications and Materials Science (2005), 202(12), 2287-2298
CODEN: PSSABA; ISSN: 0031-8965
PB Wiley-VCH Verlag GmbH & Co. KGaA
DT Journal
LA English
RE.CNT 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Potential dependent crystal habit of metallic particles formed by electrochemical deposition - formation of multiply twinned metal and alloy particles in aqueous solution
AB It is known that $\text{Au}(100)$, $\text{Au}(110)$, and $\text{Au}(111)$ single crystal surfaces undergo reconstruction in vacuum by raising temperature and that similar reconstruction of the Au surfaces takes place in electrolyte solution, depending on the electrode potential. These surface reconstructions are rationalized by lowering of surface energy. However, it was accepted that the crystal habit owes to relative growth rate of crystallog. planes in vacuum as well as in solution, i.e., the crystal habit is a kinetic phenomenon. Taking these facts into account, an interesting question may arise that whether the crystal habit of Au particles is influenced by the potential of electrode on which the particles grow. By using Au mesh for TEM as an electrode, not only Au but also other metal particles deposited on it under the controlled potential were observed by TEM. Multiply twinned particles (MTPs) of Au are formed at neg. potential (vs. SCE) but the face centered cubic single crystalline Au particles are predominantly grown at pos. potential (vs. SCE). This phenomenon suggests that the shape of Au particles can be controlled by the electrode potential which may regulate the surface energy. It is known that the reconstruction of Au surfaces accompanies the lattice shortening, and the excess neg. charge at the surface is responsible for the lattice shortening. The authors inferred that the similar lattice shortening might occur on the face centered cubic metal surfaces at neg. potential although the reconstruction is known only on Au and Pt surfaces. The other face centered cubic metals (Pt, Pd, Ag, Cu, Ir, Rh and Ni) also form MTPs at neg. electrode potential. AuCu alloyed particles take more readily multiply twinned shape than that of Au particles, i.e., MTPs of AuCu alloy are formed at pos. potential at which no MTPs of Au are formed. This phenomenon is explained by the underpotential deposition of Cu^+ ion on Au surface.
AN 2002:950106 HCAPLUS
DN 138:244804
TI Potential dependent crystal habit of metallic particles formed by electrochemical deposition - formation of multiply twinned metal and alloy particles in aqueous solution
AU Lu, Da-ling; Tanaka, Ken-ichi
CS Chemical Resources Laboratory, Tokyo Institute of Technology, Midori-ku, Yokohama, 226-8503, Japan
SO Current Topics in Electrochemistry (2001), 8, 83-141
CODEN: CTELFB
PB Research Trends
DT Journal
LA English
RE.CNT 337 THERE ARE 337 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2008 ACS on STN
 TI Pt + Cu and Pd + Cu alloy particles formed in the underpotential
 deposition region of Cu²⁺ in perchloric acid solution
 AB Formation of Pt + Cu and Pd + Cu alloy particles in acidic
 solns. at deposition electrode potentials which were located in
 the underpotential deposition region (upd) of Cu²⁺ ion was studied by TEM.
 The behavior of the fraction of Cu in the alloy particles is similar to
 that of the Au-Cu alloy particles, i.e., the fraction of Cu is independent
 of concentration of Cu²⁺ ion in solution but is dependent of deposition
 potential in
 the upd region of Cu²⁺ ion. This correlation can be described by an
 exptl. formula. Unlike the case of the Au + Cu alloy particles, the
 authors did not find the multiply twinned particles
 (MTPs) of Pt + Cu alloy particles. The MTPs of Pd + Cu alloy
 particles were observed. However, these MTPs were not stable and changed to
 polycryst. material quickly during the observation by TEM. Ag + Cu alloy
 particles were not formed in the upd region of Cu²⁺ ion.
 AN 1998:431758 HCAPLUS
 DN 129:181388
 TI Pt + Cu and Pd + Cu alloy particles formed in the underpotential
 deposition region of Cu²⁺ in perchloric acid solution
 AU Lu, Da-Ling; Ichihara, Masaki; Tanaka, Ken-ichi
 CS Inst. Solid State Physics, Univ. Tokyo, Tokyo, 106, Japan
 SO Electrochimica Acta (1998), 43(16-17), 2325-2330
 CODEN: ELCAAV; ISSN: 0013-4686
 PB Elsevier Science Ltd.
 DT Journal
 LA English
 RE.CNT 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2008 ACS on STN
 TI Au, Cu, Ag, Ni, and Pd Particles Grown in Solution at Different
 Electrode Potentials
 AB The multiply twinned particles (MTPs) of Cu, Ni, Ag,
 and Pd formed on an electrode in solution at low electrode
 potentials were systematically studied by TEM. At low electrode
 potentials the icosahedral and decahedral particles were observed for gold,
 silver, and palladium, but only the decahedral particles were observed for
 copper and nickel. The icosahedral particles of copper and nickel are
 less stable compared to the decahedral particles. The decahedral Ag
 particles were oxidized during the observation by TEM and changed into
 Ag₂O having face centered cubic structure. The stability of these transition
 metal MTPs
 formed in solution is in the sequence Au > Ag > Cu and Pt > Pd >
 Ni. The differences of d-s hybridization or s,p-d hybridization among 3d,
 4d, and 5d transition metals will increase the surface electron d., which
 results in the contraction of the lattice in the lateral direction. The
 decahedral and icosahedral particles of Au were formed on an SnO₂
 electrode, which indicates that the MTPs of Au are grown not only
 on carbon film but on SnO₂ film depending on the electrode
 potential.
 AN 1997:276278 HCAPLUS
 DN 126:335862
 TI Au, Cu, Ag, Ni, and Pd Particles Grown in Solution at Different
 Electrode Potentials
 AU Lu, Da-ling; Tanaka, Ken-ichi
 CS Institute for Solid State Physics, University of Tokyo, Tokyo, 106, Japan
 SO Journal of Physical Chemistry B (1997), 101(20), 4030-4034
 CODEN: JPCBFK; ISSN: 1089-5647
 PB American Chemical Society
 DT Journal

LA English

RE.CNT 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d hist

(FILE 'HOME' ENTERED AT 13:32:03 ON 14 JAN 2008)

FILE 'HCAPLUS' ENTERED AT 13:32:18 ON 14 JAN 2008

L1 345 S MULTIPLY(W) TWINNED
L2 28 S L1 AND (PLATINUM OR PT)
L3 4 S L2 AND ELECTRODE

=> s 12 and fuel(w) cell
424790 FUEL
2330718 CELL
73522 FUEL(W) CELL
L4 0 L2 AND FUEL(W) CELL

=> s 12 and carbon
1334218 CARBON
L5 4 L2 AND CARBON

=> s 13 not 15
L6 3 L3 NOT L5

=> s 15 not 13
L7 3 L5 NOT L3

=> d 17 1-3 ti,ab,bib

L7 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2008 ACS on STN
TI The investigation of multiply twinned L10-type FePt
nanoparticles by transmission electron microscopy
AB Thin films of FePt nanoparticles were prepared by co-deposition of Fe and
Pt on to amorphous C films kept at 350°. As-prepared films
were composed of disordered Fe-Pt nanoparticles with a face centered cubic
structure, where twinned and multiply twinned Fe-
Pt nanoparticles could be identified by TEM and electron
diffraction. Atomic ordering from face centered cubic to L10 structure was
followed by
in-situ TEM observation during heating up to 750°.
Multiply twinned (fivefold) nanoparticles of the L10
FePt were observed for the 1st time by high-resolution TEM observation. In
these nanoparticles the crystallog. c axes of L10 structure is oriented
parallel to the film plane in each segment. The stability of the 5-fold
FePt nanoparticles is briefly discussed.
AN 2004:483786 HCAPLUS
DN 141:304538
TI The investigation of multiply twinned L10-type FePt
nanoparticles by transmission electron microscopy
AU Kovacs, A.; Sato, K.; Safran, G.; Barna, P. B.; Hirotsu, Y.
CS Research Institute for Technical Physics and Materials Science, Hungarian
Academy of Sciences, Budapest, H-1121, Hung.
SO Philosophical Magazine (2004), 84(20), 2075-2081
CODEN: PMHABF; ISSN: 1478-6435
PB Taylor & Francis Ltd.
DT Journal
LA English
RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Structure and Chemical Composition of Surfactant-Stabilized PtRu Alloy Colloids
AB In situ XRD has been used to study both unsupported and silica-supported clusters PtRu[N(Oct)4Cl]5 (Pt:Ru \approx 1:1). Structural information has been gained by Debye function anal. For the unsupported clusters, the best fit simulation gives a 50/50 mixture of colloid particles with fcc symmetry and multiply twinned decahedral particles. The narrow size distribution centers around 12 Å. The near-neighbor distance is found to be 0.9% smaller than for the bulk PtRu. XANES data provide evidence for the metallic character of the Pt component. The silica-supported colloid particles oxidize rapidly in air to form an amorphous state but can be rereduced in hydrogen at room temperature. An "open-slit" XRD technique was used to study the particle growth in H₂ and He. Particles annealed to 700 °C in He show a twinned fcc symmetry with an average size of 23 Å. The CO oxidation of this catalyst was studied by in situ XRD. At 280 °C surface oxide species are formed that slowly coalesce to RuO₂ particles. After reredn. the catalyst consists of a pure hcp ruthenium phase and larger alloy particles enriched in platinum.

AN 1998:16217 HCAPLUS
DN 128:80325
TI Structure and Chemical Composition of Surfactant-Stabilized PtRu Alloy Colloids
AU Vogel, W.; Britz, P.; Boennemann, H.; Rothe, J.; Hormes, J.
CS Fritz-Haber-Institut der Max-Planck-Gesellschaft, Berlin, 14195, Germany
SO Journal of Physical Chemistry B (1997), 101(51), 11029-11036
CODEN: JPCBFK; ISSN: 1089-5647
PB American Chemical Society
DT Journal
LA English
RE.CNT 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Epitaxially grown model catalyst particles of platinum, rhodium, iridium, palladium and rhenium studied by electron microscopy
AB In order to obtain oriented thin film model catalysts, small particles of Pt, Rh, Ir, Pd and Re (2-20 nm in size) were grown by high vacuum evaporation on NaCl cleavage faces or on in situ deposited NaCl films at 523-673 K. The particles were covered with a supporting film of Al₂O₃ or carbon and removed from the substrate. High resolution electron microscopy, selected area electron diffraction and weak-beam dark-field imaging were applied to determine the particular morphol., microstructure and orientation of the observed particles. Special attention was paid to Rh particles which appear in a variety of shapes. Pt, Ir and Pd model catalyst consist mainly of (001) oriented half octahedra which may exhibit truncations at the corners or on the top. This was also the dominant shape of Rh particles but in addition half tetrahedra in (001) epitaxy and multiply-twinned particles like decahedra in (001), (011) and (111) orientation were evident. These habits provide a definite initial state for study of the changes in structure and morphol. of the particles during activating heat treatments necessary to induced catalytic activity of the Al₂O₃ supported metal films. Although Re films consisted of irregularly shaped particles, electron diffraction revealed a partial epitaxial alignment of both c.p.h. and face centered cubic

Re.
AN 1995:640098 HCAPLUS
DN 123:180241
TI Epitaxially grown model catalyst particles of platinum, rhodium, iridium, palladium and rhenium studied by electron microscopy
AU Rupprechter, G.; Hayek, K.; Rendon, L.; Jose-Yacaman, M.
CS Institut Physikalische Chemie, Universitaet Innsbruck, Innsbruck, A-6020,

Austria
SO Thin Solid Films (1995), 260(2), 148-55
CODEN: THSFAP; ISSN: 0040-6090
PB Elsevier
DT Journal
LA English

=> s multiply(w)twinned(w)platinum
14329 MULTIPLY
6762 TWINNED
229024 PLATINUM
L8 0 MULTIPLY(W) TWINNED(W) PLATINUM

=> d 15 1-4 ti,ab,bib

L5 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2008 ACS on STN
TI The investigation of multiply twinned L10-type FePt
nanoparticles by transmission electron microscopy
AB Thin films of FePt nanoparticles were prepared by co-deposition of Fe and
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structure, where twinned and multiply twinned Fe-
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followed by

in-situ TEM observation during heating up to 750°.
Multiply twinned (fivefold) nanoparticles of the L10
FePt were observed for the 1st time by high-resolution TEM observation. In
these nanoparticles the crystallog. c axes of L10 structure is oriented
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AN 2004:483786 HCAPLUS
DN 141:304538
TI The investigation of multiply twinned L10-type FePt
nanoparticles by transmission electron microscopy
AU Kovacs, A.; Sato, K.; Safran, G.; Barna, P. B.; Hirotsu, Y.
CS Research Institute for Technical Physics and Materials Science, Hungarian
Academy of Sciences, Budapest, H-1121, Hung.
SO Philosophical Magazine (2004), 84(20), 2075-2081
CODEN: PMHABF; ISSN: 1478-6435
PB Taylor & Francis Ltd.
DT Journal
LA English

RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Structure and Chemical Composition of Surfactant-Stabilized PtRu Alloy
Colloids
AB In situ XRD has been used to study both unsupported and silica-supported
clusters PtRu[N(Oct)4Cl]5 (Pt:Ru \approx 1:1). Structural
information has been gained by Debye function anal. For the unsupported
clusters, the best fit simulation gives a 50/50 mixture of colloid particles
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particles. The narrow size distribution centers around 12 Å. The
near-neighbor distance is found to be 0.9% smaller than for the bulk PtRu.
XANES data provide evidence for the metallic character of the Pt
component. The silica-supported colloid particles oxidize rapidly in air
to form an amorphous state but can be rereduced in hydrogen at room temperature
An "open-slit" XRD technique was used to study the particle growth in H2
and He. Particles annealed to 700 °C in He show a twinned fcc
symmetry with an average size of 23 Å. The CO oxidation of this catalyst was

studied by in situ XRD. At 280 °C surface oxide species are formed that slowly coalesce to RuO₂ particles. After reredn. the catalyst consists of a pure hcp ruthenium phase and larger alloy particles enriched in platinum.

AN 1998:16217 HCAPLUS

DN 128:80325

TI Structure and Chemical Composition of Surfactant-Stabilized PtRu Alloy Colloids

AU Vogel, W.; Britz, P.; Boennemann, H.; Rothe, J.; Hormes, J.

CS Fritz-Haber-Institut der Max-Planck-Gesellschaft, Berlin, 14195, Germany.

SO Journal of Physical Chemistry B (1997), 101(51), 11029-11036

CODEN: JPCBFK; ISSN: 1089-5647

PB American Chemical Society

DT Journal

LA English

RE.CNT 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2008 ACS on STN

TI Au, Cu, Ag, Ni, and Pd Particles Grown in Solution at Different Electrode Potentials

AB The multiply twinned particles (MTPs) of Cu, Ni, Ag, and Pd formed on an electrode in solution at low electrode potentials were systematically studied by TEM. At low electrode potentials the icosahedral and decahedral particles were observed for gold, silver, and palladium, but only the decahedral particles were observed for copper and nickel. The icosahedral particles of copper and nickel are less stable compared to the decahedral particles. The decahedral Ag particles were oxidized during the observation by TEM and changed into Ag₂O having face centered cubic

structure. The stability of these transition metal MTPs formed in solution is in the sequence Au > Ag > Cu and Pt > Pd > Ni. The differences of d-s hybridization or s,p-d hybridization among 3d, 4d, and 5d transition metals will increase the surface electron d., which results in the contraction of the lattice in the lateral direction. The decahedral and icosahedral particles of Au were formed on an SnO₂ electrode, which indicates that the MTPs of Au are grown not only on carbon film but on SnO₂ film depending on the electrode potential.

AN 1997:276278 HCAPLUS

DN 126:335862

TI Au, Cu, Ag, Ni, and Pd Particles Grown in Solution at Different Electrode Potentials

AU Lu, Da-ling; Tanaka, Ken-ichi

CS Institute for Solid State Physics, University of Tokyo, Tokyo, 106, Japan

SO Journal of Physical Chemistry B (1997), 101(20), 4030-4034

CODEN: JPCBFK; ISSN: 1089-5647

PB American Chemical Society

DT Journal

LA English

RE.CNT 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2008 ACS on STN

TI Epitaxially grown model catalyst particles of platinum, rhodium, iridium, palladium and rhenium studied by electron microscopy

AB In order to obtain oriented thin film model catalysts, small particles of Pt, Rh, Ir, Pd and Re (2-20 nm in size) were grown by high vacuum evaporation on NaCl cleavage faces or on in situ deposited NaCl films at 523-673 K. The particles were covered with a supporting film of Al₂O₃ or carbon and removed from the substrate. High resolution electron microscopy, selected area electron diffraction and weak-beam dark-field imaging were applied to determine the particular morphol., microstructure and orientation of the observed particles. Special attention was paid to Rh

particles which appear in a variety of shapes. Pt, Ir and Pd model catalyst consist mainly of (001) oriented half octahedra which may exhibit truncations at the corners or on the top. This was also the dominant shape of Rh particles but in addition half tetrahedra in (001) epitaxy and multiply-twinned particles like decahedra in (001), (011) and (111) orientation were evident. These habits provide a definite initial state for study of the changes in structure and morphol. of the particles during activating heat treatments necessary to induced catalytic activity of the Al₂O₃ supported metal films. Although Re films consisted of irregularly shaped particles, electron diffraction revealed a partial epitaxial alignment of both c.p.h. and face centered cubic

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DN 123:180241
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AU Rupprechter, G.; Hayek, K.; Rendon, L.; Jose-Yacaman, M.
CS Institut Physikalische Chemie, Universitaet Innsbruck, Innsbruck, A-6020, Austria
SO Thin Solid Films (1995), 260(2), 148-55
CODEN: THSFAP; ISSN: 0040-6090
PB Elsevier
DT Journal
LA English

=>


```
=> s twinned(w)particle(w)(platinum or pt)
      6762 TWINNED
      782997 PARTICLE
      229024 PLATINUM
      254646 PT
L9      0 TWINNED(W) PARTICLE(W) (PLATINUM OR PT)
```

```
=> s twinned(w)particle(w)platinum
      6762 TWINNED
      782997 PARTICLE
      229024 PLATINUM
L10     0 TWINNED(W) PARTICLE(W) PLATINUM
```

```
=> s twinned(w)particle
      6762 TWINNED
      782997 PARTICLE
L11     59 TWINNED(W) PARTICLE
```

```
=> s l11 and platinum
      229024 PLATINUM
L12     1 L11 AND PLATINUM
```

```
=> d l12 ti,ab,bib
```

L12 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2008 ACS on STN

TI Potential dependent crystal habit of metallic particles formed by electrochemical deposition - formation of multiply twinned metal and alloy particles in aqueous solution

AB It is known that Au(100), Au(110), and Au(111) single crystal surfaces undergo reconstruction in vacuum by raising temperature and that similar reconstruction of the Au surfaces takes place in electrolyte solution, depending on the electrode potential. These surface reconstructions are rationalized by lowering of surface energy. However, it was accepted that the crystal habit owes to relative growth rate of crystallog. planes in vacuum as well as in solution, i.e., the crystal habit is a kinetic phenomenon. Taking these facts into account, an interesting question may arise that whether the crystal habit of Au particles is influenced by the potential of electrode on which the particles grow. By using Au mesh for TEM as an electrode, not only Au but also other metal particles deposited on it under the controlled potential were observed by TEM. Multiply twinned particles (MTPs) of Au are formed at neg. potential (vs. SCE) but the face centered cubic

single crystalline Au particles are predominantly grown at pos. potential (vs. SCE). This phenomenon suggests that the shape of Au particles can be controlled by the electrode potential which may regulate the surface energy. It is known that the reconstruction of Au surfaces accompanies the lattice shortening, and the excess neg. charge at the surface is responsible for the lattice shortening. The authors inferred that the similar lattice shortening might occur on the face centered cubic metal surfaces at neg.

potential although the reconstruction is known only on Au and Pt surfaces. The other face centered cubic metals (Pt, Pd, Ag, Cu, Ir, Rh and Ni) also form MTPs at neg. electrode potential. AuCu alloyed particles take more readily multiply twinned shape than that of Au particles, i.e., MTPs of AuCu alloy are formed at pos. potential at which no MTPs of Au are formed. This phenomenon is explained by the underpotential deposition of Cu⁺ ion on Au surface.

AN 2002:950106 HCAPLUS

DN 138:244804

TI Potential dependent crystal habit of metallic particles formed by electrochemical deposition - formation of multiply twinned metal and alloy

particles in aqueous solution
AU Lu, Da-ling; Tanaka, Ken-ichi
CS Chemical Resources Laboratory, Tokyo Institute of Technology, Midori-ku,
Yokohama, 226-8503, Japan
SO Current Topics in Electrochemistry (2001), 8, 83-141
CODEN: CTELFB
PB Research Trends
DT Journal
LA English
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=>